

## LArSoft - Bug #16389

### Backtracker fails on corsika in-time MC

05/02/2017 08:04 PM - Tingjun Yang

|   |                |                        |            |
|---|----------------|------------------------|------------|
| <b>Status:</b>  | Assigned       | <b>Start date:</b>     | 05/02/2017 |
| <b>Priority:</b>  | Normal         | <b>Due date:</b>       |            |
| <b>Assignee:</b>  | Wesley Ketchum | <b>% Done:</b>         | 0%         |
| <b>Category:</b>  |                | <b>Estimated time:</b> | 0.00 hour  |
| <b>Target version:</b>  |                | <b>Spent time:</b>     | 0.00 hour  |
| <b>Occurs In:</b>   | v06_34_00      | <b>Co-Assignees:</b>   |            |
| <b>Experiment:</b>  | MicroBooNE     |                        |            |
| <b>Description</b>  |                |                        |            |
| Marco reported an issue with running backtracker on MicroBooNE corsika MC.<br>setup uboonecode v06_34_00 -q e14:prof  |                |                        |            |
| <pre>lar -c standard_ana_uboone.fcl /pnfs/uboone/mc/uboone/reconstructed/prodcosmics_corsika_cmc_uboone_intime_reco/reco/prod_intime_fix_v06_26_01/prodcosmics_corsika_cmc_uboone_intime_0_20170410T222014_gen2_13def821-c925-4deb-b6db-1eedbf20cb3e_20170419T053704_reco1_20170419T061659_reco2.root</pre>   |                |                        |            |
| <pre>%MSG-s ArtException: PostProcessPath end_path 02-May-2017 20:01:06 CDT PostProcessEvent cet::exception caught in art ---- EventProcessorFailure BEGIN   An exception occurred during current event processing ---- EventProcessorFailure BEGIN   An exception occurred during current event processing ---- ScheduleExecutionFailure BEGIN     ProcessingStopped.  ---- ProductNotFound BEGIN   A request to resolve an art::Ptr to a product containing items of type: simb::MCTruth with ProductID 1:9   cannot be satisfied because the product cannot be found.   The productGetter was not set -- are you trying to dereference a Ptr during mixing?   cet::exception going through module ---- ProductNotFound END   Exception going through path end_path ---- ScheduleExecutionFailure END ---- EventProcessorFailure END ---- EventProcessorFailure END %MSG %MSG-s ArtException: PostProcessPath end_path 02-May-2017 20:01:06 CDT PostProcessEvent cet::exception caught in art ---- EventProcessorFailure BEGIN   An exception occurred during current event processing ---- EventProcessorFailure BEGIN   An exception occurred during current event processing ---- ScheduleExecutionFailure BEGIN     ProcessingStopped.  ---- ProductNotFound BEGIN   A request to resolve an art::Ptr to a product containing items of type: simb::MCTruth with ProductID 1:9   cannot be satisfied because the product cannot be found.   The productGetter was not set -- are you trying to dereference a Ptr during mixing?   cet::exception going through module ---- ProductNotFound END   Exception going through path end_path ---- ScheduleExecutionFailure END ---- EventProcessorFailure END ---- EventProcessorFailure END</pre> |                |                        |            |

%MSG

Art has completed and will exit with status 18.

Allinea shows the problem is at line 128 of BackTracker\_service.cc:

```
for(size_t mc = 0; mc < fMCTruthList.size(); ++mc)
    LOG_DEBUG("BackTracker") << *(fMCTruthList.at(mc).get());
```

## History

### #1 - 05/08/2017 10:34 AM - Lynn Garren

- Status changed from New to Assigned

- Assignee set to Brian Rebel

Brian, would you have a quick look? There is also a possibility that there is an upstream bug in CORSIKAGen.

### #2 - 05/08/2017 11:34 AM - Lynn Garren

- Assignee changed from Brian Rebel to Tingjun Yang

From Brian:

I suggest having whoever is trying to back track those files do the debugging.

Based on the error reported, I would guess that a MCTruth object is simply never made/filled for the Corsika events which would make them impossible to back track. I would have Tingjun or whoever is trying to use it verify that the MCTruth object is made and filled.

### #3 - 05/17/2017 12:02 PM - Marco Del Tutto

- Subject changed from Backtracker fails on corsika MC to Backtracker fails on corsika in-time MC

Adding a comment:

I also see some track ID without an MCParticle. Talking to Wes, this may be due to the fact that Corsika in-time has two separate paths of geant4 simulation. I am not sure if this is related, but this may lead to a break in the geant-trackID to MCParticle relation and to MCTruth objects not correctly associated to the MCParticles in the event.

### #4 - 10/11/2017 01:26 PM - Stefano Soleti

I have a similar issue with v06\_26\_01\_07

When I do

```
auto const &generator_handle =
```

```
evt.getValidHandle<std::vector<simb::MCTruth>>(_mctruthLabel);
```

I get

%MSG-s ArtException: PostPathEndRun end\_path 11-Oct-2017 17:28:39 UTC PostEndRun

cet::exception caught in art

---- EventProcessorFailure BEGIN

An exception occurred during current event processing

---- EventProcessorFailure BEGIN

An exception occurred during current event processing

---- ScheduleExecutionFailure BEGIN

ProcessingStopped.

---- ProductNotFound BEGIN

A request to resolve an art::Ptr to a product containing items of type: simb::MCTruth with ProductID 1 :9

cannot be satisfied because the product cannot be found.

The productGetter was not set -- are you trying to dereference a Ptr during mixing?

cet::exception going through module

---- ProductNotFound END

Exception going through path end\_path

---- ScheduleExecutionFailure END

---- EventProcessorFailure END

cet::exception caught in EventProcessor and rethrown

---- EventProcessorFailure END

%MSG

Art has completed and will exit with status 65.

Would be nice to try to fix this, I am happy to help if you could give me guidance

**#5 - 10/13/2017 10:33 AM - Marco Del Tutto**

This also affects calls to BuildMCParticleHitMaps in larpandora/LArPandoraInterface/LArPandoraHelper.cxx, as this function throws an exception if it finds a track ID without an MCParticle.

**#6 - 10/13/2017 11:42 AM - Gianluca Petrillo**

Could you publish here how to reproduce the problem?

- complete setup (larsoft and uboonecode version)
- configuration file being executed
- pointer to an input file to test on
- any special instruction if not just `lar -c config.fcl -s input.root`

**#7 - 10/14/2017 09:04 PM - Tingjun Yang**

Gianluca Petrillo wrote:

Could you publish here how to reproduce the problem?

- complete setup (larsoft and uboonecode version)
- configuration file being executed
- pointer to an input file to test on
- any special instruction if not just `lar -c config.fcl -s input.root`

Hi Gianluca,

Marco's example can still be used to reproduce this problem:

```
setup uboonecode v06_34_00 -q e14:prof
lar -c standard_ana_uboone.fcl /pnfs/uboone/mc/uboone/reconstructed/prodcosmics_corsika_cmc_uboone_intime_reco
/reco/prod_intime_fix_v06_26_01/prodcosmics_corsika_cmc_uboone_intime_0_20170410T222014_gen2_13def821-c925-4de
b-b6db-1eedbf20cb3e_20170419T053704_reco1_20170419T061659_reco2.root
```

Shall I reassign this ticket to you?

Thanks,  
Tingjun

**#8 - 10/17/2017 05:03 PM - Tingjun Yang**

- Assignee changed from Tingjun Yang to Wesley Ketchum

Reassign to Wes.